WHAT IS CLAIMED IS:

1. A peptide comprising amino acid sequence X-Y or Y-X, wherein X is an aromatic amino acid and Y is any amino acid other than glycine, the peptide being at least 2 and no more than 15 amino acids in length.

2. The peptide of claim 1, wherein at least one amino acid of said at least 2 and no more than 15 amino acids of the peptide is a D stereoisomer.

3. The peptide of claim 1, wherein at least one amino acid of said at least 2 and no more than 15 amino acids of the peptide is an L stereoisomer.

4. The peptide of claim 1, wherein Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine and natural derivatives thereof.

5. The peptide of claim 1, wherein Y is a β-sheet breaker amino acid.

6. The peptide of claim 5, wherein said β-sheet breaker amino acid is a naturally occurring amino acid.

7. The peptide of claim 6, wherein said naturally occurring amino acid is selected from the group consisting of proline, aspartic acid, glutamic acid, glycine, lysine and serine.

8. The peptide of claim 5, wherein said β-sheet breaker amino acid is a synthetic amino acid.

9. The peptide of claim 8, wherein said synthetic amino acid is a Cα-methylated amino acid.

10. The peptide of claim 9, wherein said Cα-methylated amino acid is α-

aminoisobutyric acid.

11. The peptide of claim 1, wherein the peptide is a linear or cyclic peptide.

12. The peptide of claim 1, wherein the peptide is selected from the group consisting of SEQ ID NOs. 4, 12-19, 27-45, 112-123, 125, 127, 128-149 and 150.

13. The peptide of claim 1, wherein the peptide is two amino acids in length and Y is a β-sheet breaker amino acid.

14. The peptide of claim 13, wherein the peptide is as set forth in SEQ ID NO: 145.

15. The peptide of claim 1, wherein the peptide is 3 amino acids in length, whereas Y is an aromatic amino acid and an amino acid residue attached to said amino acid sequence X-Y or Y-X is a β-sheet breaker amino acid.

16. The peptide of claim 15, wherein said β-sheet breaker amino acid is at a C-terminus of the peptide.

17. The peptide of claim 1, wherein the peptide is at least 4 amino acids in length and includes at least two serine residues at a C-terminus thereof.

18. The peptide of claim 1, wherein the peptide is at least 3 amino acids in length and includes a thiolated amino acid at an N-terminus thereof.

19. The peptide of claim 1, wherein the peptide is at least 3 amino acids in length and whereas at least one of said amino acids of the peptide other than X-Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine and natural derivatives thereof.

20. The peptide of claim 1, wherein the peptide is at least 3 amino acids in length and whereas at least one of said amino acids of the peptide other than X-Y is a β-sheet breaker amino acid.

21. The peptide of claim 20, wherein said β-sheet breaker amino acid is a naturally occurring amino acid.

22. The peptide of claim 21, wherein said naturally occurring amino acid is selected from the group consisting of proline, aspartic acid, glutamic acid, glycine, lysine and serine.

23. The peptide of claim 20, wherein said β-sheet breaker amino acid is a synthetic amino acid.

24. The peptide of claim 23, wherein said synthetic amino acid is a Cα-methylated amino acid.

25. The peptide of claim 24, wherein said Cα-methylated amino acid is α-aminoisobutyric acid.

26. The peptide of claim 20, wherein said β-sheet breaker amino acid is located downstream to said X-Y in the peptide.

27. The peptide of claim 20, wherein said β-sheet breaker amino acid is located upstream to said X-Y in the peptide.

28. The peptide of claim 1, wherein the peptide is at least 3 amino acids in length and whereas at least one of said amino acids of the peptide is a positively charged amino acid and at least one of said amino acids of the peptide is a negatively charged amino acid.

29. The peptide of claim 28, wherein said positively charged amino acid is

selected from the group consisting of lysine, arginine, and natural and synthetic derivatives thereof.

30. The peptide of claim 28, wherein said negatively charged amino acid is selected from the group consisting of aspartic acid, glutamic acid and natural and synthetic derivatives thereof.

31. A peptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOs. 4, 12-19, 27-45, 112-123, 125, 127, 128-149 and 150 the peptide being at least 2 and no more than 15 amino acids in length.

32. The peptide of claim 31, wherein the peptide is capable of self-aggregating under physiological conditions.

33. The peptide of claim 31, wherein the peptide is at least 4 amino acids and includes at least two serine residues at a C-terminus thereof.

34. The peptide of claim 31, wherein the peptide is a linear or cyclic peptide.

35. The peptide of claim 31, wherein at least one amino acid of said at least 2 and no more than 15 amino acids of the peptide is D stereoisomer.

36. The peptide of claim 31, wherein at least one amino acid of said at least 2 and no more than 15 amino acids of the peptide is L stereoisomer.

37. The peptide of claim 31, wherein the peptide is at least 3 amino acids in length and includes a thiolated amino acid at an N-terminus thereof.

38. A peptide selected from the group consisting of SEQ ID NOs. 4, 12-19, 27-45, 112-123, 125, 127, 128-149 and 150.

39. The peptide of claim 38, wherein the peptide is a linear or cyclic peptide.

40. A method of treating or preventing an amyloid-associated disease in an individual, the method comprising providing to the individual a therapeutically effective amount of a peptide including the amino acid sequence X-Y or Y-X, wherein X is an aromatic amino acid and Y is any amino acid other than glycine, said peptide being at least 2 and no more than 15 amino acids in length.

41. The method of claim 40, wherein Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine and natural derivatives thereof.

42. The method of claim 40, wherein Y is a β-sheet breaker amino acid.

43. The method of claim 42, wherein said β-sheet breaker amino acid is a naturally occurring amino acid.

44. The method of claim 43, wherein said naturally occurring amino acid is selected from the group consisting of proline, aspartic acid, glutamic acid, glycine, lysine and serine.

45. The method of claim 42, wherein said β-sheet breaker amino acid is a synthetic amino acid.

46. The method of claim 45, wherein said synthetic amino acid is a Cα-methylated amino acid.

47. The method of claim 46, wherein said Cα-methylated amino acid is α-aminoisobutyric acid.

48. The method of claim 40, wherein said peptide is a linear or cyclic

peptide.

49. The method of claim 40, wherein said peptide is selected from the group consisting of SEQ ID NOs. 4, 12-19, 27-45, 112-123, 125 and 127.

50. The method of claim 40, wherein said peptide is at least 4 amino acids in length and includes at least two serine residues at a C-terminus thereof.

51. The method of claim 40, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide other than X-Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine and natural derivatives thereof.

52. The method of claim 40, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide other than X-Y is a is a β-sheet breaker amino acid.

53. The method of claim 52, wherein said β-sheet breaker amino acid is a naturally occurring amino acid.

54. The method of claim 53, wherein said naturally occurring amino acid is selected from the group consisting of proline, aspartic acid, glutamic acid, glycine, lysine and serine.

55. The method of claim 52, wherein said β-sheet breaker amino acid is a synthetic amino acid.

56. The method of claim 55, wherein said synthetic amino acid is a Cα-methylated amino acid.

57. The method of claim 56, wherein said Cα-methylated amino acid is α-aminoisobutyric acid.

58. The method of claim 52, wherein said β-sheet breaker amino acid is located downstream to said X-Y in said peptide.

59. The method of claim 52, wherein said β-sheet breaker amino acid is located upstream to said X-Y in said peptide.

60. The method of claim 40, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide is a positively charged amino acid and at least one of said amino acids of said peptide is a negatively charged amino acid.

61. The method of claim 60, wherein said positively charged amino acid is selected from the group consisting of lysine, arginine, and natural and synthetic derivatives thereof.

62. The method of claim 60, wherein said negatively charged amino acid is selected from the group consisting of aspartic acid, glutamic acid and natural and synthetic derivatives thereof.

63. The method of claim 40, wherein said peptide is an active ingredient of a pharmaceutical composition which also includes a physiologically acceptable carrier.

64. The method of claim 40, wherein said peptide is expressed from a nucleic acid construct.

65. The method of claim 40, wherein at least one amino acid of said at least 2 and no more than 15 amino acids of the peptide is a D stereoisomer.

66. The method of claim 40, wherein at least one amino acid of said at least 2 and no more than 15 amino acids of the peptide is an L stereoisomer.

67. The method of claim 40, wherein the peptide is two amino acids in length and Y is a β-sheet breaker amino acid.

68. The method of claim 67, wherein the peptide is as set forth in SEQ ID NO: 145.

69. The method of claim 40, wherein the peptide is 3 amino acids in length, whereas Y is an aromatic amino acid and an amino acid residue attached to said amino acid sequence X-Y or Y-X is a β-sheet breaker amino acid.

70. The method of claim 69, wherein said β-sheet breaker amino acid is at a C-terminus of the peptide.

71. The method of claim 40, wherein the peptide is at least 3 amino acids in length and includes a thiolated amino acid at an N-terminus thereof.

72. A pharmaceutical composition for treating or preventing an amyloid-associated disease comprising as an active ingredient a peptide including the amino acid sequence X-Y or Y-X, wherein X is an aromatic amino acid and Y is any amino acid other than glycine, said peptide being at least 2 and no more than 15 amino acids in length and a pharmaceutically acceptable carrier or diluent.

73. The pharmaceutical composition of claim 72, wherein Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine and natural derivatives thereof.

74. The pharmaceutical composition of claim 72, wherein Y is a β-sheet breaker amino acid.

75. The pharmaceutical composition of claim 74, wherein said β-sheet breaker amino acid is a naturally occurring amino acid.

76. The pharmaceutical composition of claim 75, wherein said naturally occurring amino acid is selected from the group consisting of proline, aspartic acid, glutamic acid, glycine, lysine and serine.

77. The pharmaceutical composition of claim 74, wherein said β-sheet breaker amino acid is a synthetic amino acid.

78. The pharmaceutical composition of claim 77, wherein said synthetic amino acid is a Cα-methylated amino acid.

79. The pharmaceutical composition of claim 78, wherein said Cα-methylated amino acid is α-aminoisobutyric acid.

80. The pharmaceutical composition of claim 72, wherein said peptide is a linear or cyclic peptide.

81. The pharmaceutical composition of claim 72, wherein said peptide is selected from the group consisting of SEQ ID NOs. 4, 12-19, 27-45, 112-123, 125 and 127.

82. The pharmaceutical composition of claim 72, wherein said peptide is at least 4 amino acids in length and includes at least two serine residues at a C-terminus thereof.

83. The pharmaceutical composition of claim 72, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide other than X-Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine and natural derivatives thereof.

84. The pharmaceutical composition of claim 72, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide other than X-Y is a is a β-sheet breaker amino acid.

85. The pharmaceutical composition of claim 84, wherein said β-sheet breaker amino acid is a naturally occurring amino acid.

86. The pharmaceutical composition of claim 85, wherein said naturally occurring amino acid is selected from the group consisting of proline, aspartic acid, glutamic acid, glycine, lysine and serine.

87. The pharmaceutical composition of claim 84, wherein said β-sheet breaker amino acid is a synthetic amino acid.

88. The pharmaceutical composition of claim 87, wherein said synthetic amino acid is a Cα-methylated amino acid.

89. The pharmaceutical composition of claim 88, wherein said Cα-methylated amino acid is α-aminoisobutyric acid.

90. The pharmaceutical composition of claim 84, wherein said β-sheet breaker amino acid is located downstream to said X-Y in said peptide.

91. The pharmaceutical composition of claim 84, wherein said β-sheet breaker amino acid is located upstream to said X-Y in said peptide.

92. The pharmaceutical composition of claim 72, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide is a positively charged amino acid and at least one of said amino acids of said peptide is a negatively charged amino acid.

93. The pharmaceutical composition of claim 92, wherein said positively charged amino acid is selected from the group consisting of lysine, arginine, and natural and synthetic derivatives thereof.

94. The pharmaceutical composition of claim 92, wherein said negatively

charged amino acid is selected from the group consisting of aspartic acid, glutamic acid and natural and synthetic derivatives thereof.

95. The pharmaceutical composition of claim 72, wherein at least one amino acid of said at least 2 and no more than 15 amino acids of the peptide is a D stereoisomer.

96. The pharmaceutical composition of claim 72, wherein at least one amino acid of said at least 2 and no more than 15 amino acids of the peptide is an L stereoisomer.

97. The pharmaceutical composition of claim 72, wherein the peptide is two amino acids in length and Y is a β-sheet breaker amino acid.

98. The pharmaceutical composition of claim 97, wherein the peptide is as set forth in SEQ ID NO: 145.

99. The pharmaceutical composition of claim 72, wherein the peptide is 3 amino acids in length, whereas Y is an aromatic amino acid and an amino acid residue attached to said amino acid sequence X-Y or Y-X is a β-sheet breaker amino acid.

100. The pharmaceutical composition of claim 99, wherein said β-sheet breaker amino acid is at a C-terminus of the peptide.

101. The pharmaceutical composition of claim 72, wherein the peptide is at least 3 amino acids in length and includes a thiolated amino acid at an N-terminus thereof.

102. A nucleic acid construct comprising a polynucleotide segment encoding a peptide including the amino acid sequence X-Y or Y-X, wherein X is an aromatic amino acid and Y is any amino acid other than glycine, said peptide being at least 2 and no more than 15 amino acids in length.

103. The nucleic acid construct of claim 102, wherein Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine.

104. The nucleic acid construct of claim 102, wherein Y is a β-sheet breaker amino acid.

105. The nucleic acid construct of claim 104, wherein said β-sheet breaker amino acid is selected from the group consisting of proline, aspartic acid, glutamic acid, glycine, lysine and serine.

106. The nucleic acid construct of claim 102, wherein said peptide is selected from the group consisting of SEQ ID NOs. 4, 12-19, 27-45, 112-123, 125 and 127.

107. The nucleic acid construct of claim 102, wherein said peptide is at least 4 amino acids in length and includes at least two serine residues at a C-terminus thereof.

108. The nucleic acid construct of claim 102, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide other than X-Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine and glutamine.

109. The nucleic acid construct of claim 102, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide other than X-Y is a is a β-sheet breaker amino acid.

110. The nucleic acid construct of claim 109, wherein said β-sheet breaker amino acid is selected from the group consisting of proline, aspartic acid, glutamic acid, glycine, lysine and serine.

111. The nucleic acid construct of claim 109, wherein said β-sheet breaker amino acid is located downstream to said X-Y in said peptide.

112. The nucleic acid construct of claim 109, wherein said β-sheet breaker amino acid is located upstream to said X-Y in said peptide.

113. The nucleic acid construct of claim 102, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide is a positively charged amino acid and at least one of said amino acids of said peptide is a negatively charged amino acid.

114. The nucleic acid construct of claim 113, wherein said positively charged amino acid is selected from the group consisting of lysine and arginine.

115. The nucleic acid construct of claim 113, wherein said negatively charged amino acid is selected from the group consisting of aspartic acid and glutamic acid.

116. The nucleic acid construct of claim 102, further comprising a promoter.

117. The pharmaceutical composition of claim 102, wherein the peptide is at least 3 amino acids in length and includes a thiolated amino acid at an N-terminus thereof.

118. An antibody or an antibody fragment comprising an antigen recognition region capable of binding a peptide including the amino acid sequence X-Y or Y-X, wherein X is an aromatic amino acid and Y is any amino acid other than glycine, said peptide being at least 2 and no more than 15 amino acids in length.

119. The antibody of claim 118, wherein Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine and natural derivatives thereof.

120. The antibody of claim 118, wherein Y is a β-sheet breaker amino acid.

121. The antibody of claim 120, wherein said β-sheet breaker amino acid is a naturally occurring amino acid.

122. The antibody of claim 121, wherein said naturally occurring amino acid is selected from the group consisting of proline, aspartic acid, glutamic acid, glycine, lysine and serine.

123. The antibody of claim 120, wherein said β-sheet breaker amino acid is a synthetic amino acid.

124. The antibody of claim 123, wherein said synthetic amino acid is a Cα-methylated amino acid.

125. The antibody of claim 124, wherein said Cα-methylated amino acid is α-aminoisobutyric acid.

126. The antibody of claim 118, wherein said peptide is a linear or cyclic peptide.

127. The antibody of claim 118, wherein said peptide is selected from the group consisting of SEQ ID NOs. 4, 12-19, 27-45, 112-123, 125 and 127.

128. The antibody of claim 118, wherein said peptide is at least 4 amino acids in length and includes at least two serine residues at a C-terminus thereof.

129. The antibody of claim 118, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide other than X-Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine and natural derivatives thereof.

130. The antibody of claim 118, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide other than X-Y is a is a β-sheet breaker amino acid.

131. The antibody of claim 130, wherein said β-sheet breaker amino acid is a naturally occurring amino acid.

132. The antibody of claim 131, wherein said naturally occurring amino acid is selected from the group consisting of proline, aspartic acid, glutamic acid, glycine, lysine and serine.

133. The antibody of claim 130, wherein said β-sheet breaker amino acid is a synthetic amino acid.

134. The antibody of claim 133, wherein said synthetic amino acid is a Cα-methylated amino acid.

135. The antibody of claim 134, wherein said Cα-methylated amino acid is α-aminoisobutyric acid.

136. The antibody of claim 130, wherein said β-sheet breaker amino acid is located downstream to said X-Y in said peptide.

137. The antibody of claim 130, wherein said β-sheet breaker amino acid is located upstream to said X-Y in said peptide.

138. The antibody of claim 118, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide is a positively charged amino acid and at least one of said amino acids of said peptide is a negatively charged amino acid.

139. The antibody of claim 138, wherein said positively charged amino acid

is selected from the group consisting of lysine, arginine, and natural and synthetic derivatives thereof.

140. The antibody of claim 138, wherein said negatively charged amino acid is selected from the group consisting of aspartic acid, glutamic acid and natural and synthetic derivatives thereof.

141. A pharmaceutical composition for treating or preventing an amyloid-associated disease comprising as an active ingredient an antibody or an antibody fragment having an antigen recognition region capable of binding a peptide including the amino acid sequence X-Y or Y-X, wherein X is an aromatic amino acid and Y is any amino acid other than glycine, said peptide being at least 2 and no more than 15 amino acids in length and a pharmaceutical acceptable carrier or diluent.

142. The pharmaceutical composition of claim 141, wherein Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine and natural derivatives thereof.

143. The pharmaceutical composition of claim 141, wherein said peptide is selected from the group consisting of SEQ ID NOs. 4, 12-19 and 27-44.

144. The pharmaceutical composition of claim 141, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide other than X-Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine and natural derivatives thereof.

145. The pharmaceutical composition of claim 141, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide is a positively charged amino acid and at least one of said amino acids of said peptide is a negatively charged amino acid.

146. The pharmaceutical composition of claim 145, wherein said positively

charged amino acid is selected from the group consisting of lysine, arginine, and natural and synthetic derivatives thereof.

147. The pharmaceutical composition of claim 145, wherein said negatively charged amino acid is selected from the group consisting of aspartic acid, glutamic acid and natural and synthetic derivatives thereof.

148. A method of treating or preventing an amyloid-associated disease in an individual, the method comprising providing to the individual therapeutically effective amount of an antibody or an antibody fragment having an antigen recognition region capable of binding a peptide including the amino acid sequence X-Y or Y-X, wherein X is an aromatic amino acid and Y is any amino acid other than glycine, said peptide being at least 2 and no more than 15 amino acids in length.

149. The method of claim 148, wherein Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine and natural derivatives thereof.

150. The method of claim 148, wherein said peptide is selected from the group consisting of SEQ ID NOs. 4, 12-19 and 27-44.

151. The method of claim 148, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide other than X-Y is a polar uncharged amino acid selected from the group consisting of serine, threonine, asparagine, glutamine and natural derivatives thereof.

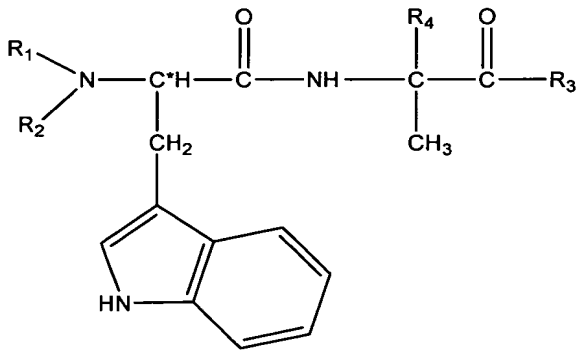
152. The method of claim 148, wherein said peptide is at least 3 amino acids in length and whereas at least one of said amino acids of said peptide is a positively charged amino acid and at least one of said amino acids of said peptide is a negatively charged amino acid.

153. The method of claim 152, wherein said positively charged amino acid

is selected from the group consisting of lysine, arginine, and natural and synthetic derivatives thereof.

154. The method of claim 152, wherein said negatively charged amino acid is selected from the group consisting of aspartic acid, glutamic acid and natural and synthetic derivatives thereof.

155. A peptide having the general Formula:



wherein:

C* is a chiral carbon having a D configuration.

R_1 and R_2 are each independently selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, carboxy, C-thiocarb;

R_3 is selected from the group consisting of hydroxy, alkoxy, aryloxy, thiohydroxy, thioalkoxy, thioaryloxy, halo and amine; and

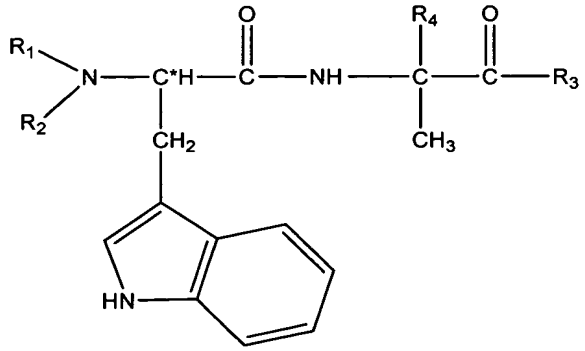
R_4 is alkyl.

156. The peptide of claim 155, wherein R_4 is methyl.

157. The peptide of claim 155, wherein R_1 and R_2 are each hydrogen and R_3 is hydroxy.

158. The peptide of claim 155 is a cyclic peptide.

159. A method of treating or preventing an amyloid-associated disease in an individual, the method comprising providing to the individual a therapeutically effective amount of a peptide having the general Formula:



wherein:

C* is a chiral carbon having a D configuration.

R_1 and R_2 are each independently selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, carboxy, C-thiocarb;

R_3 is selected from the group consisting of hydroxy, alkoxy, aryloxy, thiohydroxy, thioalkoxy, thioaryloxy, halo and amine; and

R_4 is alkyl.

160. The method of claim 159, wherein R_4 is methyl.

161. The method of claim 159, wherein R_1 and R_2 are each hydrogen and R_3 is hydroxy.

162. The method of claim 159, wherein said peptide is a cyclic peptide.